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THE PRICES OF AMERICAN STOCKS: 1890–1909

The index number of American stock prices, presented in this paper, has been made in pursuance of an investigation into the relations between prices and business prosperity. The prices of stocks published by the *Wall Street Journal* and *Dun's Review*, while convenient records of daily and monthly fluctuations, are not well adapted for comparison with our most complete tables of prices of labor and of commodities at wholesale and retail—those published by the federal Bureau of Labor. For these stock tables give average actual prices, and the Bureau of Labor tables give average relative prices. Moreover, since some stocks have prices many times as high as other stocks, the objections which have led to the disuse of average actual prices of commodities sold in high-priced and low-priced units apply, though in less degree, to average actual prices of stocks. On the other hand, the one true index number of American stocks—computed by John R. Commons and N. I. Stone¹—is based upon average actual prices in 1879–89, gives results by fiscal years, and ends with 1900–01, while the Bureau of Labor tables are based upon average actual prices in 1890–99, give results by calendar years, and extend (at present) to 1907 or 1908. To determine the relations between the fluctuations in prices of different orders, it is accord-

¹ *Quarterly Bulletin of the Bureau of Economic Research*, July and October, 1900. Reprinted in summary in *Final Report of the Industrial Commission*, XIX, 29, 1101–3.

ingly necessary to make a table showing the relative prices of stocks on the basis of average actual prices in 1890-99.

The data for this table were obtained from "Prices for Stocks at the New York Stock Exchange" published annually in the *Financial Review*. These tables give the highest and lowest prices of each stock quoted each month—a sufficient body of quotations to be representative. All the railroads were included which had approximately complete and regular records for the twenty years 1890 to 1909. Several important lines, such as the Burlington, Lake Shore, Michigan Central, and Northern Pacific, were omitted because quotations were scanty or altogether lacking for several years. The Alton and Rock Island have undergone changes in organization which break the continuity of their quotations. In the cases of the Pullman Company and the Adams Express Company a similar break has resulted from stock dividends. Stock dividends which did not force quotations suddenly to a lower level, and the payment of assessments which did not raise quotations suddenly to a higher level, have been disregarded. If all stocks affected by such changes since 1890 were excluded, the remaining list would be short indeed. In railways undergoing reorganization, the prices of voting trust certificates have been taken in lieu of the prices of shares. No preferred shares were taken, since as a class they are hybrids—a cross between common stocks and bonds. Thirty-five railway stocks were found which met requirements, and five express, steamship, and telegraph stocks were added to bring the number of series up to forty.

The work of transcribing the quotations, casting the average actual prices in 1890-99 and computing and averaging the relative prices was done by Mr. and Mrs. Otto Tinnemann, of Berkeley. At each stage, the results were checked to insure arithmetical accuracy. No decimals were kept, inasmuch as the margin of error in most uses of index numbers as representatives of the trend of price movements is at least 1 per cent.

Table I shows what stocks were used, and gives the prices which stand for 100. The list is a representative one, including railways in all parts of the country; railways which underwent

TABLE I

LIST OF STOCKS INCLUDED IN THE FOLLOWING TABLES, AND THEIR AVERAGE
ACTUAL PRICES, 1890-1899

<i>North Atlantic Railways:</i>		Prices per Share
New York, New Haven & Hartford		\$207.90
New York, Ontario & Western		17.50
New York Central		107.40
Pennsylvania*		109.30
Erie		17.50
<i>Anthracite Coal Railways:</i>		
Central of New Jersey		108.30
Delaware & Hudson		126.70
Delaware, Lackawanna & Western		154.40
Reading		26.50
<i>Middle Western Railways:</i>		
Cleveland, Cincinnati, Chicago & St. Louis.....		47.90
Wheeling & Lake Erie		16.50
New York, Chicago & St. Louis		14.80
Wabash		8.70
Pittsburg, Cincinnati, Chicago & St. Louis		24.90
Canada Southern		52.70
Lake Erie & Western		18.30
Illinois Central		100.80
<i>Northwestern Railways:</i>		
Chicago, Milwaukee & St. Paul		79.20
Chicago & Northwestern		114.60
Chicago, St. Paul, Minneapolis & Omaha		51.40
Duluth, South Shore & Atlantic		5.80
Iowa Central		9.20
Minneapolis & St. Louis		19.60
Wisconsin Central		10.10
<i>Southern Railways:</i>		
Chesapeake & Ohio		20.80
Norfolk & Western		12.10
Louisville & Nashville		62.80
Missouri Pacific		41.40
Missouri, Kansas & Texas		13.10
Texas & Pacific		12.30

*The Pennsylvania Railroad is not quoted with regularity on the New York market until September, 1897. Figures for earlier years were accordingly made by taking double the price of \$50 shares as quoted on the Philadelphia exchange.

TABLE I—*Continued*

<i>Pacific Railways:</i>	Prices per Share
Atchison, Topeka & Santa Fe	21.60
Denver & Rio Grande	14.90
Southern Pacific	26.20
Union Pacific	29.30
Canadian Pacific	74.40
<i>Express, Steamship, and Telegraph Companies:</i>	
American Express Company	119.20
United States Express Company	51.60
Wells Fargo Express Company	124.20
Pacific Mail Steamship Company	30.40
Western Union Telegraph Company	86.90

reorganization in the nineties and railways which have suffered no financial disasters; railways whose stocks have long been upon an investment basis, and railways whose stocks have been a football of speculation; railways whose shares command high, medium, and low prices; railways which belong to almost all the great systems of the day.

Tables II, III, and IV present the arithmetic means of the relative prices of this list of stocks by years, quarters, and months, respectively.² In order to make the record more useful, the monthly table has been supplied with certain data which aid in accounting for the fluctuations. In marking the "turning points" I have neglected minor movements, and paid attention to

² Many discrepancies of one point appear between the relative prices by years and the averages of the relative prices by quarters; or between the relative prices by quarters and averages computed from the figures for the months included. They result from dropping fractions less than one-half, or carrying fractions of one-half or more. The two or three cases of wider discrepancy—for example, in 1890—are caused by the lack of quotations for some one stock for several months. The averages for quarters and years, in other words, have been computed directly from average actual prices—not from the relative prices by months.

The figures for "low" and "high" in the table by months are not the extreme relative prices of the single stocks which showed the widest fluctuations; but arithmetic means of these extremes for forty stocks. In the tables by quarters and years the "low" and "high" figures are similar arithmetic means based not on the highest or lowest quotations for any single month, but on averages of the highest and lowest quotations for all three, or all twelve, of the months included.

TABLE II

RELATIVE PRICES OF 40 TRANSPORTATION STOCKS, BY YEARS, 1890-1909.
AVERAGE PRICES OF 1890-99 = 100. ARITHMETIC MEANS

	Low	High	Spread	Average
1890.....	115	127	12	121
1891.....	107	119	12	113
1892.....	117	128	11	123
1893.....	87	100	13	93
1894.....	77	86	9	82
1895.....	80	91	11	85
1896.....	73	82	9	77
1897.....	79	88	9	84
1898.....	89	99	10	94
1899.....	121	136	15	128
1900.....	126	141	15	134
1901.....	196	225	29	211
1902.....	239	261	22	250
1903.....	189	212	23	201
1904.....	183	201	18	192
1905.....	239	260	21	250
1906.....	256	279	23	267
1907.....	192	216	24	204
1908.....	191	212	21	201
1909.....	266	288	22	277

TABLE III

RELATIVE PRICES OF 40 TRANSPORTATION STOCKS, BY QUARTERS, 1890-1909.
AVERAGE PRICES OF 1890-99 = 100. ARITHMETIC MEANS

	FIRST QUARTER		SECOND QUARTER		THIRD QUARTER		FOURTH QUARTER	
	Low	High	Low	High	Low	High	Low	High
1890.....	121	131	126	138	123	133	96	113
1891.....	102	112	103	114	104	121	117	130
1892.....	121	133	118	127	117	126	114	124
1893.....	108	120	90	103	70	85	79	92
1894.....	80	88	79	87	75	84	76	83
1895.....	70	77	81	92	90	100	79	92
1896.....	76	85	76	83	65	74	75	85
1897.....	74	81	71	77	85	98	88	97
1898.....	87	98	87	94	93	101	94	106
1899.....	115	131	117	131	126	140	124	141
1900.....	125	138	126	140	121	130	133	156
1901.....	167	193	194	237	204	234	219	238
1902.....	228	244	240	259	255	280	233	261
1903.....	235	254	197	221	162	192	163	179
1904.....	170	187	164	174	182	200	213	239
1905.....	235	257	225	249	244	262	253	273
1906.....	260	284	244	273	257	279	261	282
1907.....	224	256	199	219	193	212	153	179
1908.....	158	180	181	202	200	218	223	248
1909.....	245	268	267	287	274	292	278	301

TABLE IV

RELATIVE PRICES OF 40 TRANSPORTATION STOCKS BY MONTHS, 1890-1909. ARITHMETIC MEANS

	RELATIVE PRICES OF STOCKS				NO. OF SHARES SOLD MILLIONS	AVERAGE CALL- LOAN RATES %	NET IMPORTS (+) OR EXPORTS (-) OF GOLD MIL. DOLLARS	CURRENT EVENTS AFFECTING THE STOCK MARKET
	Low	High	Spread	Turning Points				
1890 January....	125	134	9		6.4	7.70	+ .6	Reading announced inability to pay interest on preferred income bonds; difficulties of Sixth National Bank
February....	121	131	10		5.2	4.25	+ .3	Reduction of surplus reserve of banks; rate-cutting by railways
March.....	119	128	9		4.5	4.25	+ .2	Irregular market; small corner in Reading
April.....	121	133	12		5.1	4.30	- .6	Silver-purchase law in prospect; large railway earnings
May.....	133	145	12	Max.	11.1	4.88	Speculative interest keen; extra dividends by Pennsylvania and Big Four
June.....	131	141	10		5.4	4.75	- 3.3	Foreign buying declined; money in London firmer; fear of gold exports; speculative spirit dampened
July.....	129	136	7		3.0	4.60	- 10.7	Silver-purchase law approved; London selling American rails
August....	125	135	10		4.1	11.63	- .4	Gold exports; tight money; London selling American rails
September..	118	131	13		5.1	6.75	+ 1.1	Treasury relief in money market, by purchase of bonds
October....	109	123	14		7.2	3.80	+ 2.2	Continuation of selling on London account
November..	92	116	24		9.1	7.00	+ 1.4	Baring crisis in London; financial failures in N. Y.; issue of clearing-house loan certificates
December ..	92	106	14	Min.	5.1	5.00	+ 5.4	Improvement toward end; Morgan's "harmony meeting" of railway presidents; strong report of Vanderbilt roads; bank surplus restored
1891 January....	101	114	13		5.6	3.90	+ .7	Recovery aided by relaxation of strain in money market

1891 February...	105	113	8		3.3	2.88	- 3.4	Market dull, waiting till doubts about financial legislation should be set at rest by adjournment of Congress
March.....	101	108	7		3.6	2.88	- 4.5	Foreign situation unfavorable; state legislation hampering railways feared
April	104	117	13	Max.	7.2	3.30	- 13.9	Favorable crop prospects
May	105	116	11		6.3	4.38	- 30.4	Gold exports discouraging; no foreign buying
June	100	111	11		4.0	3.25	- 15.5	Market very dull on continued exports of gold
July	98	107	9	Min.	3.2	2.20	- 5.6	End of gold exports on the 25th
August.....	99	121	22		5.8	2.13	+ 1.2	Large harvests at home assured; serious shortage abroad; sharp advance
September..	114	134	20		11.2	4.50	+ 7.1	Buoyancy continued until 24th; then market declined on profit-taking sales and reports that the Goulds opposed further rise
October.....	119	131	12		6.7	4.25	+ 16.1	Market awaiting developments.
November..	113	125	12		5.3	4.38	+ 8.5	Financial troubles reported in Paris and Berlin; failure of Maverick National Bank; railway earnings heavy
December ..	118	132	14		6.8	2.94	+ 5.8	Decided improvement after middle of month; large earnings continued
1892 January	121	135	14	Max.	10.0	2.40	+ .3	Large earnings and bright prospects; money abundant; selling on foreign account
February...	120	133	13		11.4	2.00	- 3.7	Reading lease of Lehigh Valley and Jersey Central Railways
March	120	131	11		8.9	2.00	- 3.2	Market dull; rumors of combinations; merchandise imports exceeding exports; House rejected free-silver bill
April.....	120	129	9		6.8	2.00	- 7.0	Dulness continued; no important change, save the increase in gold exports
May	118	127	9		6.2	1.50	- 3.3	Business largely in specialties; heavy floods in West and South
June	116	125	9	Min.	5.4	1.40	- 16.6	Receivers appointed for Richmond Terminal
July	117	128	11		3.6	1.88	- 10.2	Free-coinage bill passed by Senate, defeated in House
August.....	120	130	10	Max.	5.4	2.05	- 5.7	Reading lease annulled; industrials buoyant
September...	114	123	9		6.9	4.13	- 2.3	Cholera "scare" in New York

TABLE IV—Continued

	RELATIVE PRICES OF STOCKS				NO OF SHARES SOLD MILLIONS	AVERAGE CALL- LOAN RATE %	NET IMPORTS (+) OR EXPORTS (-) OF GOLD ML. DOLLARS	CURRENT EVENTS AFFECTING THE STOCK MARKET
	Low	High	Spread	Turning Points				
1892 October	119	127	8		7.0	5.63	+ 2.6	Reading acquired interest in Boston & Maine and control of New York & New England
November	114	125	11		5.8	5.15	+ 1.4	Cleveland elected president
December	111	120	9		8.4	6.81	- 11.3	Death of Jay Gould; stringent money market
1893 January	113	125	12		10.6	4.00	- 12.2	Activity in industrials
February	107	122	15		10.7	3.00	- 13.0	Reading receivership
March	102	113	11		7.4	8.20	- 1.5	Money market stringent. Industrials suffered
April	103	115	12		6.3	4.88	- 18.3	Gold reserve fell below \$100,000,000; bank failures in Australia
May	87	103	16		9.0	3.60	- 15.2	National Cordage receivership; bank failures in western states and in Australia; stock-exchange panic May 4 and 5
June	81	94	13		4.8	8.88	- 1.7	Panic of 1893 began. Extra session of Congress called. Four minor railway receiverships
July	66	87	21		5.9	7.75	+ 5.8	Bank failures in West; Erie receivership
August	68	81	13	Min.	4.9	5.50	+ 40.6	Premium on currency; House passed bill repealing silver-purchase act; three railway receiverships, including Northern Pacific
September	76	88	12		4.7	3.75	+ 5.2	Premium disappeared; money market easier; four railway receiverships, including Wisconsin Central
October	78	93	15		6.3	2.38	+ 1.1	Senate passed silver-purchase repeal law October 30; six railway receiverships, including Union Pacific
November	83	91	8	Max.	5.5	1.70	+ 4.1	Money redundant in New York; heavy demand for high-grade bonds; two railway receiverships
December	76	91	15		4.9	1.16	- 1.9	Four railway receiverships including Santa Fé and New York and New England
1894 January	77	87	10	Min.	4.5	1.02	- .6	Erie reorganization plan

1894 February...	81	86	5		3.2	1.00	- 1.1	House passed tariff bill; Treasury sold \$50,000,000 bonds to protect reserve; one railway receiver-ship
March	83	91	8		4.8	1.09	- 2.9	Cleveland vetoed seigniorage-coinage bill; two railway reorganization plans; gold reserve above \$100,000,000
April	85	93	8	Max.	4.0	1.13	- 9.4	Coxey's army; coal strike; Great Northern Strike; one railway receivership; New York & New England reorganization plan
May	78	86	8		4.8	1.10	-23.1	Gold reserve fell below \$100,000,000; railway rate wars; floods; Pullman strike
June	74	81	7		3.4	1.00	-22.4	Coal strike settled; American Railway Union strike began; Santa Fé reorganization plan; Southern Railway organized
July	72	78	6	Min.	2.8	1.00	-12.8	Railway strike riots in Chicago; Senate passed tariff bill; deadlock between the two houses; Gold reserve \$55,000,000
August	74	88	14		5.0	1.00	- 1.9	Tariff bill became law; shortage of corn crop anticipated; Minneapolis & St. Louis reorganization plan
September...	80	88	8	Max.	4.1	1.00	+ .4	Reading reorganization plan; corn reports still worse; moderate revival of general business
October	76	85	9		3.9	1.00	+ .5	Low price of coal reacted on anthracite railways; Duluth & Winnipeg receivership
November...	76	85	9		4.5	1.03	+ 1.5	Treasury sold \$50,000,000 bonds to recruit gold reserve; one railway receivership; Populist losses in Congressional elections
December ..	75	81	6		4.1	1.44	- 9.4	Cleveland's message declared for maintenance of gold payments; large exports of gold caused uneasiness
1895 January	70	78	8		3.2	1.35	-24.7	Congress defeated administration measures to defend gold reserve; amount fell to \$45,000,000
February...	70	76	6	Min.	3.0	1.50	+ 4.1	Treasury contract with Morgan-Belmont gold syndicate; Norfolk & Western receivership; anthracite coal trade demoralized

TABLE IV—Continued

	RELATIVE PRICES OF STOCKS				NO. OF SHARES SOLD MILLIONS	AVERAGE CALL- LOAN RATE %	NET IMPORTS (+) OR EXPORTS (-) OF GOLD ML. DOLLARS	CURRENT EVENTS AFFECTING THE STOCK MARKET
	Low	High	Spread	Turning Points				
1895 March.....	69	78	9		5.1	2.25	+ 4.1	Syndicate loan restoring confidence; presidents of anthracite roads met, seeking to control demoralization of coal trade
April.....	75	85	10		5.0	2.25	+ 2.0	Business revival; Santa Fé reorganization plan; buying on European account
May.....	80	95	15		8.9	1.32	+ 3.3	Extensive European buying; conflicting crop reports; speculation in wheat
June.....	86	96	10		6.0	1.16	+ 2.0	Less foreign buying; business revival extended; "boom" in iron trade; better crop prospects; syndicate loan completed
July.....	89	97	8		5.8	1.40	— 3.3	Gold exports resumed; favorable business and crop conditions; attempts to effect agreement for maintenance of railway rates
August.....	90	100	10		5.3	1.03	—15.1	Bright crop prospects affect gold exports; Erie reorganization plans; marked rise in commodity prices
September..	91	102	11	Max.	6.8	1.56	—16.7	Fall on the 13th, caused by heavy gold export, followed by recovery on reassuring announcements by the gold syndicate
October....	88	98	10		5.3	2.17	— .1	Cotton crop short; speculation for rise checked exports; break in "Kaffirs" in London and Paris and Eastern Question caused selling on European account
November...	82	90	8		5.0	1.97	—13.5	European bourse panic on the 9th; heavy gold exports; reaction in business; decline in commodity prices
December ..	66	89	23	Min.	6.9	4.56	—14.2	Cleveland's Venezuela message on the 17th caused panic on the stock exchange; new bond issue for gold reserve impending

1896 January	71	83	12		4.5	4.90	- .2	Popular loan for \$100,000,000 announced on 6th; Venezuela "war scare" died out; anthracite railway agreement
February	79	87	8		5.2	3.94	+ 9.4	Loan subscriptions \$527,000,000; Baltimore & Ohio receivership; Senate resolutions recognizing Cubans as belligerents
March	77	84	7		4.6	3.50	+ .3	House accepted these resolutions; heavy mercantile failures; severe storms
April	78	90	12	Max.	4.1	3.02	- 2.7	Buying for European account; president took no action upon Cuban resolutions
May	77	82	5		2.8	2.53	-18.5	Silver men captured many Democratic state conventions; business depressed; St. Louis tornado on 27th
June	75	84	9		4.4	1.94	- 6.1	Silver men defeated in Republican convention; continued gains in Democratic state conventions
July	66	76	10		5.6	2.07	-10.4	Bryan's nomination; gold reserve reduced to less than 90 millions; banks aided treasury by exchanging gold for legal tenders
August	61	70	9	Min.	4.3	4.69	+ 2.1	Lowest points reached between 7th and 11th; advance after Bryan's Madison Square meeting; gold imports began late in August
September	68	77	9		4.6	5.45	+34.1	Gold Democratic convention; large Republican pluralities in Vermont and Maine; rise in price of wheat
October	70	80	10		4.9	11.13	+27.6	Increasing confidence in Bryan's defeat; stringent money market caused by hoarding gold; Western Freight Association formed
November	79	90	11	Max.	5.9	6.25	+ 6.9	McKinley elected on 3d; sharp advance followed by reaction on profit-taking sales, small earnings of spring-wheat roads, etc.
December	75	84	9		3.9	1.95	+ 2.2	Senate discussing resolution recognizing independence of Cuba; heavy bank failures in the West
1897 January	76	83	7		3.4	1.78	+ .2	Railway earnings low; anthracite and bituminous coal carriers affected by demoralization of coal trade

TABLE IV—Continued

	RELATIVE PRICES OF STOCKS				NO. OF SHARES SOLD MILLIONS	AVERAGE CALL- LOAN RATE %	NET IMPORTS (+) OR EXPORTS (-) OF GOLD ML. DOLLARS	CURRENT EVENTS AFFECTING THE STOCK MARKET
	Low	High	Spread	Turning Points				
1897 February....	74	79	5		2.8	1.63	+ .2	Steel-rail pool collapsed; large purchase of print cloths; renewed discussion of Cuban affairs in Senate
March	72	81	9		5.0	1.62	+ .3	Trans-Missouri Freight Association held illegal; Lake Shore refunded 7 per cent. bonds at 3½ per cent.; extra session of Congress for tariff legisla- tion
April.....	69	75	6	Min.	3.6	1.50	— 6.0	Graeco-Turkish war; floods in Mississippi Valley; N.Y. Central refunded bonds
May.....	70	74	4		3.3	1.41	— 8.9	Senate resolution recognizing Cuba as a belligerent; Supreme Court denied right of Interstate Com- merce Commission to fix rates
June.....	73	81	8		6.4	1.20	— 7.0	Marked improvement in crop situation, followed by rise of Granger stocks; Chicago & North- western refunded bonds
July	78	88	10		6.9	1.19	— 4.9	Dingley tariff passed; bituminous coal strike; crops excellent at home, seriously short abroad; Klondike gold rush
August	85	101	16		11.4	1.25	+ 2.4	“Boom” on stock exchange, due to crop situation and revival of business
September...	92	107	15	Max.	13.1	2.22	+ 4.1	Reaction in latter part of month on profit-taking sales; rumors of war with Spain; yellow fever in the South; coal strike ended
October.....	90	101	11		8.0	2.50	+ 11.0	Recession of speculation; renewed fears of war with Spain
November..	85	95	10	Min.	5.8	1.81	+ 1.8	Break on 5th caused by fears of war with Spain; recovery on good railway earnings, and end of yellow fever
December ..	90	97	7		7.5	2.92	+ 1.5	Meeting of Congress caused little disturbance

1898 January	91	101	10	Max.	9.3	2.50	+ 3.1	Merger of Lake Shore & Michigan Southern with N. Y. Central reported
February	88	101	13		9.0	1.78	+ 4.3	The "Maine" sunk by explosion in harbor of Havana; industrial consolidations
March	82	93	11		10.1	2.17	+29.6	Market fluctuating on conflicting rumors of war with Spain; industrial consolidations
April	83	89	6	Min.	6.0	2.97	+31.0	War began on 21st; investment buying almost ceased; more industrial consolidations
May	87	97	10		9.2	1.95	+13.0	Battle of Manila Bay on 1st; crop prospects excellent
June	94	101	7	Max.	9.2	1.25	+ 2.8	Leiter wheat corner collapsed; Baltimore & Ohio reorganization plan; several increases of railway dividends
July	92	98	6	Min.	4.8	1.25	+ 1.0	Battle of Santiago Bay on 3d; peace overtures on 26th; low price of wheat; grain movement light
August	93	104	11	Max.	12.1	1.70	+13.1	Peace protocol signed on 12th; granger stocks rose on wheat prospects; coal shares fell on condition of trade
September	94	101	7		9.4	3.78	+13.4	Fears of monetary stringency; break in prices of industrials; Federal Steel Co. formed with capital of 200 millions
October	93	100	7	Min.	7.5	2.25	+15.0	Fashoda incident threatened rupture between England and France; coal, cotton, woolen, and leather trades unsatisfactory
November	92	103	11		11.0	2.10	+ 3.8	Republican gains in elections; Fashoda incident settled; Spain agreed to cede Philippines; monetary stringency in Berlin
December	100	118	18		15.3	2.41	+ 6.9	Peace treaty signed on 10th; coal and cotton trades improved; railway dividends increased
1899 January	110	132	22		24.3	2.72	+ 4.1	Great "boom" on stock exchange; enormous industrial consolidations; railway-rate situation improved; dividend increases
February	118	133	15	Max.	16.1	2.47	+ 4.3	Speculation subsided; unfavorable news from Philippines; severe storms.
March	118	129	11		17.7	4.10	+ 1.7	Industrial consolidations continued; great rise in iron and steel prices; speculation in industrials; disquieting news from Samoa

	RELATIVE PRICES OF STOCKS				NO. OF SHARES SOLD MILLIONS	AVERAGE CALL- LOAN RATE %	NET IMPORTS (+) OR EXPORTS (-) OF GOLD ML. DOLLARS	CURRENT EVENTS AFFECTING THE STOCK MARKET
	Low	High	Spread	Turning Points				
1899								
April	118	133	15		17.0	5.13	+ 1.0	Break in industrials, followed by rally
May	117	131	14		15.0	3.52	+ .6	Panic in industrials after death of Flower on 12th; \$20,000,000 indemnity paid to Spain
June	115	129	14	Min.	10.9	2.63	- 18.2	Industrials in disfavor; railways gained after a weak opening on improved crop prospects and larger earnings
July	124	134	10		8.4	4.47	- .2	Gain continued on favorable reports of earnings and crops; numerous strikes
August	128	144	16	Max.	13.0	3.27	+ .6	Easier money, declining foreign exchange, active trade, expanding earnings, increasing dividends, assurance of large corn crop
September ..	129	142	13		12.5	6.38	+ 1.5	Tight money and prospect of war between England and the Transvaal affected the market
October	127	140	13		10.9	7.50	+ 5.5	Boer war began; Bank of England rate raised from 3½ to 5 per cent; tight money in New York; ad- vances in railway rates
November ..	132	143	11		13.7	7.60	+ .9	Early weakness because of tight money; later strength on Treasury purchases of bonds; Bank of England rate 6 per cent.
December ..	114	139	25	Min.	17.1	11.13	- 7.0	Stock-exchange panic on 18th; London markets disturbed by military reverses; financial diffi- culties in Boston from decline in copper stocks; failure Produce Exchange Trust Co. in New York; recovery after the 22d
1900								
January	122	134	12		9.8	4.15	- 4.2	Activity of business; large railway earnings; advances in freight rates by exchanges in classi- fication; larger dividends
February ...	125	137	12		10.2	2.25	+ .1	Early advance on increased dividends; later reaction on decline of street-railway and industrial stocks

1900 March	127	144	17		14.4	3.94	+	.5	Gold-standard act, followed by foreign buying; street-railway troubles ended
April	132	148	16	Max.	14.8	3.06	+	1.0	American Steel & Wire Co. on 16th closed several mills, because of failing demand; confidence undermined
May	126	138	12		9.5	2.00	-	9.1	Uncertainty about course of industry; reaction in trade more marked
June	119	134	15		7.3	1.69	-	6.8	Unfavorable crop reports, continued reaction in trade; Boxer troubles in China
July	123	133	10		6.2	1.53	+	2.2	Better weather for the crops; Bryan nominated for presidency by Democrats
August	124	131	7		4.0	1.30	-	15.6	Extreme dullness, because of presidential campaign
September ..	117	127	10	Min.	5.2	1.61	+	2.7	Galveston disaster; anthracite coal strike; uneasiness about campaign
October	123	140	17		10.9	3.57	+	8.8	Settlement of coal strike; more confidence in Bryan's defeat; gold imports
November ..	133	154	21		22.6	5.06	+	9.5	McKinley's election followed by a great outburst of speculation; increased dividends
December ..	144	175	31		23.4	5.13	+	2.5	"Boom" extended on Morgan's purchase of Pennsylvania Coal Co. for Erie, and rumors of "community of interest" plans
1901 January	157	181	24		30.3	3.07	-	4.7	Speculation culminated on Morgan's purchase of Central of New Jersey for the Reading; moderate reaction after the 9th
February ..	167	188	21		21.9	2.00	+	1.0	U. S. Steel Corporation launched; Union Pacific bought control of Southern Pacific
March	175	210	35		27.1	2.34	+	1.2	Marked success of steel "flotation"; rumors of further combinations
April	196	229	33		41.7	4.30	-	3.4	High tide of speculation; many rumors of further combinations; Texas oil fever
May	169	239	70	Max. and Min.	35.3	6.88	-	9.2	Northern Pacific panic on the 9th; no failures; recovery late in month
June	215	242	27	Max.	19.8	4.31	-	2.6	Early strength lost on suspension Seventh National Bank; failure H. Marquand & Co.; bank failures in Germany

TABLE IV—Continued

	RELATIVE PRICES OF STOCKS				NO. OF SHARES SOLD MILLIONS	AVERAGE CALL- LOAN RATE %	NET IMPORTS (+) OR EXPORTS (-) OF GOLD MIL. DOLLARS	CURRENT EVENTS AFFECTING THE STOCK MARKET
	Low	High	Spread	Turning Points				
1901 July	197	234	37	Min.	16.0	4.30	- 1.5	Poor bank statement; steelworkers' strike; damage to crops by drought; threatened rate reduction by Santa Fé, etc.
August.....	205	231	26		10.8	2.44	+ 2.4	Crop prospects somewhat improved; steel strike thought to be failing
September..	209	238	29		14.0	4.34	+ 6.5	McKinley's assassination and death caused sharp declines; recovery prompt on settlement of steel strike, rumors of mergers, etc.
October.....	212	232	20		14.0	3.55	+ 1.0	Industrials fell, railways rose on rumors of mergers, or communities of interest, and increased dividends
November..	224	242	18	Max.	18.3	4.19	- 11.3	Effect of formation of Northern Securities Co. offset by break in copper stocks and fears of tight money
December..	219	238	19	Min.	16.8	6.25	- 3.1	Amalgamated Copper Co. gave over attempt to hold copper at 17c.; tight money; market stronger late in month
1902 January....	223	241	18		14.8	4.57	- 1.2	Several industrial combinations in difficulty; large new stock and bond issues
February....	229	246	17		13.0	2.38	- 7.7	Severe snowstorms; government began proceedings against Northern Securities Co.
March	232	245	13		12.0	3.94	- 2.8	Market continued to hold its own despite labor troubles and bad weather
April.....	236	261	25		26.6	5.10	- 1.9	Rampant speculation and clique manipulation; public not prominent in the market; Morgan's steamship combination announced
May	239	258	19		13.5	5.56	- 1.2	Collapse of "Webb-Meyer Securities"; anthracite coal strike; three stock-exchange firms failed
June.....	246	260	14		7.8	2.84	+ .4	Railway dividend increases; industrial dividend reductions; peace in South Africa

1902 July.....	249	268	19		16.4	3.52	- 7.0	Crop indications favorable; Rock Island Co. plan ill received; gold exports depressing at end of month
August.....	259	284	25		14.3	3.78	- 1.4	Excellent crop prospects outweighed coal strike and increasing firmness of money market
September..	258	289	31	Max.	21.0	10.80	+ 2.0	Severe break in prices at end of month; liquidation induced by high money rates and calling of loans by banks
October.....	245	273	28		16.4	7.63	+ 7.2	Appointment of coal strike commission and easing of money market caused rise; later fall on new labor troubles and fears of gold exports
November..	232	261	29		17.1	4.88	+ 2.3	Forced liquidation by pools; bank accommodation difficult to secure
December ..	222	252	30	Min.	15.7	6.81	- 1.5	Renewed liquidation due to monetary tension; later buoyancy on formation of \$50,000,000 money pool
1903 January....	243	260	17	Max.	16.0	3.75	+ .8	Buoyancy for 10 or 12 days, followed by reaction; marked irregularity in movements of different stocks
February....	241	258	17		10.9	2.88	- .5	"Anti-trust" legislation—Bureau of Corporations established; Elkins law, law expediting hearings under Sherman anti-trust law, etc.
March	222	245	23		15.1	6.00	+ 2.7	Liquidation—labor troubles, increased operating expenses, failure of Aldrich financial bill, dissensions in large corporations
April	210	230	20		12.3	4.19	- .9	Prices broke on 13th on Northern Securities decision; later rallied on winter-wheat prospects, etc.
May	199	227	28		12.5	2.44	-13.7	Liquidation renewed; many strikes; iron trade depressed, cotton speculation; stock panic in Montreal
June	180	207	27		15.4	3.05	-10.5	U. S. Shipbuilding Co. receivership; large gold exports; failures in Canada; floods in South-west; drought in North
July	168	201	33		14.9	2.50	- 6.7	Stock-exchange failures; cotton corner
August.....	159	191	32		14.4	2.03	+ 3.2	Two more failures on stock exchange; rally after 10th on shifting of holdings to stronger hands; corn and cotton crops late

TABLE IV—Continued

	RELATIVE PRICES OF STOCKS				NO. OF SHARES SOLD MILLIONS	AVERAGE CALL- LOAN RATE %	NET IMPORTS (+) OR EXPORTS (-) OF GOLD MIL. DOLLARS	CURRENT EVENTS AFFECTING THE STOCK MARKET
	Low	High	Spread	Turning Points				
1903 September...	159	184	25		10.8	2.32	+ 1.6	Further liquidation; reports of crop damage; cuts in iron and steel prices; labor troubles; industry depressed
October....	158	175	17	Min.	12.9	2.69	+ 1.9	Low prices tempted buyers, despite bank troubles in Baltimore, Pittsburgh, and St. Louis; depression in iron trade, etc.
November...	161	175	14		10.7	5.19	+ 7.7	Advance latter part of month; large cotton shipments and engagements of gold for import; bond market improved
December..	171	187	16		15.2	5.50	+ 14.6	Further large bond issues; tone distinctly more hopeful
1904 January....	176	192	16	Max.	12.3	2.34	+ 6.7	Strong bond market; severe storms hampered railways; wild speculation in cotton and coffee
February....	166	184	18		8.8	1.81	+ 3.2	Russo-Japanese war; Baltimore fire; break in cotton market; speculation in wheat
March	163	179	16		11.4	1.75	+ 5.0	Northern Securities decision by Supreme Court followed by rise; disagreement of Hill and Harri- man interests; Sully failed
April	168	177	9		8.2	1.38	- 9.9	Hill-Harriman litigation; backward spring, gold exports, poor railway earnings
May.....	161	170	9	Min.	5.3	1.55	- 33.2	United States paid for Panama Canal; uncertainty regarding wheat crop
June.....	163	172	9		5.0	1.13	+ 2.7	Rise latter part of month on better crop prospects; settlement of strike on Great Lakes; end of gold exports
July	170	185	15		12.5	1.03	+ 7.5	Parker nominated for president by Democrats; better crop prospects; strikes in packing industry, building trades, etc.

1904 August	179	202	23		12.5	.90	- 3.8	Market stronger, despite cutting of iron and steel prices, reports of damage to wheat crop, rise of cotton, etc.
September	195	211	16		18.8	1.53	+ 1.1	Iron demand revived on further price reductions; several strikes ended; crop prospects uncertain; industry reviving
October	205	230	25		32.6	2.03	+ 3.7	Industrial revival extended; good crops assured; marked buoyancy on stock exchange
November	216	243	27		32.0	2.80	- 16.7	"Boom" in stocks followed Roosevelt's election; industrial revival continued to gain ground
December	217	244	27		28.1	3.13	- 10.9	Market broke on 6th and 13th under attacks by Lawson and president's message; prompt reaction
1905 January	225	248	23		11.8	2.25	- 15.7	Rumors of agreement between Hill-Harriman interests, and of combination of Union Pacific, Standard Oil, and Vanderbilt interests
February	238	257	19		10.6	2.19	- 13.4	Further rumors of impending combinations, accompanied by heavy buying
March	243	264	21	Max.	12.9	3.20	+ 1.8	Reaction on failure of rumored combinations to materialize, and on disappointment of hopes for peace between Russia and Japan
April	229	261	32		12.7	3.25	+ .4	Symptoms of friction among railways; break in wheat market; bank defalcations in Milwaukee; insurance scandals
May	220	241	21	Min.	12.1	2.42	+ 1.3	Reaction in iron trade; renewed attacks by Lawson; further insurance scandals; Pennsylvania bond subscriptions small
June	223	242	19		10.8	2.50	- 2.7	Improvement latter part of month on prospects of peace between Russia and Japan; Ryan's purchase of Equitable stock; good crop reports
July	237	250	13		10.9	2.31	+ 2.9	Market rose on dividend disbursements and then fluctuated on crop reports; cotton statistics scandal
August	244	268	24		10.9	2.05	+ 2.1	Peace between Russia and Japan; iron trade buoyant; market broke on 30th and 31st under realizing sales and attack by Lawson
September	252	266	14		10.9	3.56	+ 3.0	Market recovered and advanced until checked by high rates for money toward close of month

TABLE IV—Continued

	RELATIVE PRICES OF STOCKS				NO. OF SHARES SOLD MILLIONS	AVERAGE CALL- LOAN RATE %	NET IMPORTS (+) OR EXPORTS (-) OF GOLD ML. DOLLARS	CURRENT EVENTS AFFECTING THE STOCK MARKET
	Low	High	Spread	Turning Points				
1905 October	253	270	17		12.6	5.31	+ 9.7	Course of market irregular and uncertain Market declined until 13th on dear money; Rus- sian mutinies; large Hearst vote in N.Y.; later market rose on increased dividends Buoyancy despite extreme tension in money market; passing of dividend on preferred stock by Rock Island Co., failure of Walsh banks in Chicago As monetary stringency relaxed, market rose; later decline on profit-taking sales, and proposed inquiry into restraint of trade House passed Hepburn rate bill; fear of coal strike; report of Armstrong Insurance com- mittee, etc. Fear of monetary stringency; fear of coal strike; court decisions unfavorable to corporations San Francisco earthquake and fire; dear money; coal strike; sales of securities by fire-insurance companies Coal strike ended; Garfield's report on Standard Oil; money easier Hepburn rate bill became law; Reynolds-Neill report on Chicago stock yards; bond market dull Crop outlook highly favorable; money market returned to ease; U. S. Steel announced dividend on common stock July 31 Union Pacific and Southern Pacific dividends increased seasonally on 17th; "boom" followed; checked late in month
November	251	272	21		13.1	7.70	+ 3.0	
December	255	278	23		14.4	16.50	
1906 January	265	294	29	Max.	38.5	8.65	- 4.4	
February	260	283	23		21.7	4.63	- 7.7	
March	255	274	19		19.5	4.88	- 1.6	
April	246	276	30		24.3	9.50	+ 11.2	
May	239	270	31	Min.	24.0	4.15	+ 27.9	
June	247	271	24		20.3	3.25	- 1.8	
July	243	263	20		16.3	2.97	+ 7.0	
August	258	286	28		31.8	4.44	+ 6.2	

1906 September...	270	287	17	Max.	26.0	4.88	+ 27.9	Market weak and strong by turns; monetary stringency returning
October....	264	285	21		21.9	5.15	+ 18.6	Irregularity continued; break on news of advance of Bank of England rate to 6 per cent. on 19th
November...	261	280	19		19.4	7.50	+ 5.8	Increase of Pennsylvania Railroad dividend strengthened market early in month; later uncertainty on dear money
December...	259	281	22		20.5	14.00	+ 4.6	Tight money and announcement of large security issues offset effect of increased dividends
1907 January....	243	270	27		22.7	6.15	- .2	Further issues of securities; substitution of short-term notes for bonds; increased operating expenses; congestion of traffic
February....	234	252	18		16.5	4.38	+ 1.3	Further borrowing on short-term notes; Interstate Commerce Commission's investigation of the Harriman lines
March.....	193	243	50	Min.	32.2	6.38	+ 2.0	Severe liquidation on the 14th and 25th; failure of Morgan's attempt to arrange conference between Roosevelt and railway presidents
April.....	208	225	17	Max.	19.2	2.35	+ 1.5	Money market relaxed; stock market recovered in a measure; unfavorable crop reports
May.....	194	219	25	Min.	15.8	2.31	- 2.9	Unseasonable cold made crops backward; difficulty in financing capital requirements continued
June.....	197	213	16		9.7	3.13	- 22.8	Bond syndicates expiring with large portion of bonds unsold; crop prospects somewhat brighter
July.....	208	222	14	Max.	12.8	4.55	- 5.1	Federal policy of asking for receivers in prosecution of trusts announced; intimations of dividend increases
August.....	183	211	28	Min.	15.6	3.06	- 2.4	Standard Oil fine; numerous prosecutions of corporations; signs of industrial reaction; Pope receivership
September...	190	204	14	Max.	12.2	4.00	+ .2	Copper fell 22-15½c. per pound; extra dividend by Burlington; success of N. Y. City bond sale after interest had been raised from 4 to 4½ per cent.
October....	151	192	41		17.3	21.00	- .1	Embarrassment of Heintze, Morse, and Thomas banks; failure of Knickerbocker Trust Co.; panic

TABLE IV—Continued

	RELATIVE PRICES OF STOCKS				NO. OF SHARES SOLD MILLIONS	AVERAGE CALL- LOAN RATE % %	NET IMPORTS (+) OR EXPORTS (-) OF GOLD ML. DOLLARS	CURRENT EVENTS AFFECTING THE STOCK MARKET
	Low	High	Spread	Turning Points				
1907 November...	149	169	20	Min.	9.7	12.25	+ 61.7	Panic continued; limitation of payments by banks; bargain buying of stocks in small lots Strain relaxed; decided gain on stock exchange in closing days of the month Return of ease in money market; revival of confidence; Seaboard Air Line and Chicago Great Western receiverships President's message and letter to Interstate Commerce Commission judged unfavorable to corporate interests; more railway receiverships President's message of March 25 judged more favorable; suspended banks reopening; copper prospects brighter Successful financing of Erie's capital requirements; railway expenses reduced Congress adjourned without passing laws adverse to corporate interests; Gould stocks weak Inactivity; cut in steel prices; dividend reductions and suspensions; Taft nominated Bryan nominated; Court of Appeals reversed Standard Oil fine decision; efforts to increase freight rates Advance of stocks opposed by "shorts"; flagrant manipulation followed by suspension of a large brokerage firm Uneasiness over presidential campaign; suspension of dividends by American Locomotive Co. Revival in iron and copper trades; net earnings increasing through saving of expenses
December ..	158	176	18		12.6	14.60	+ 42.5	
1908 January....	163	186	23	Max.	16.6	4.75	+ 9.4	
February...	150	169	19	Min.	9.8	1.81	- .1	
March.....	158	182	24		15.9	1.85	+ 1.1	
April.....	171	191	20		11.6	1.72	- 13.0	
May.....	184	213	29		21.0	1.66	- 24.4	
June.....	192	207	15		9.7	1.52	- 6.2	
July.....	196	216	20		13.9	1.22	- 2.7	
August.....	204	219	15		18.9	1.06	- 3.1	
September..	202	223	21		17.6	1.35	
October.....	208	226	18		14.3	1.44	+ .8	

1908 November...	222	254	32		25.0	1.75	- 1.0	Buoyancy followed Taft's election; moderate reaction on profit-taking sales, suit against "Sugar Trust," etc.
December ..	240	264	24		23.0	2.90	- 3.3	Market irregular; advances in freight rates announced; tariff hearings begun by Committee of Ways and Means
1909 January	247	271	24	Max.	17.3	1.81	- 5.5	Consolidated Gas decision, maintaining legality of 80-cent rate, caused decline; Harriman entered N. Y. Central board
February...	240	266	26	Min.	12.3	2.25	- 6.4	Steel Corporation announced new policy of "protecting their customers" on 10th; heavy liquidation followed
March.....	248	267	19		13.7	1.85	-16.7	Congress in extra session on the tariff; iron, coal and copper trades in difficulties
April.....	260	284	24		19.1	1.94	- 4.1	Improved industrial conditions; larger purchases of bonds; increasing railway earnings
May.....	270	286	16		16.5	1.84	-10.1	Supreme Court decision on Commodities Clause of Hepburn act on 3d caused rise; expanding business activity
June.....	273	294	21	Max.	20.3	1.88	- 7.2	Reaction followed Taft's recommendation of tax on corporations, hitch in plan for listing Steel shares in Paris; poor state of copper trade
July.....	274	288	14	Min.	12.8	1.81	-14.6	Tariff nearing completion; increasing business activity; higher dividend on steel common
August.....	274	296	22		24.6	2.18	- 5.0	Tariff act signed on 5th; market fluctuated on conflicting rumors of Harriman's health; crop prospects impaired by heat
September...	272	292	20		20.0	2.69	- 6.0	Harriman died on 9th; Taft's speeches caused decline in third week
October....	278	301	23		21.7	4.31	- 3.6	Early decline on dearer money in New York and London; foreign selling; later extensive rise
November...	279	298	19		18.8	4.65	-13.1	Circuit court found Standard Oil contravening Sherman Anti-trust Law on 20th; new stock issues depressing
December ..	284	307	23	Max.	17.6	5.03	- 9.4	No disturbing features in Taft's message; speculation encouraged by rise of certain special stocks; general list buoyant after Christmas

the mean between the highest and lowest prices, rather than to either extreme. The number of shares sold on the Stock Exchange is given as an indication of the waxing and waning volume of speculation. The average interest upon call loans is computed from the average stock-exchange rates by weeks.³ The net imports or exports of gold are taken from the *Reports of the Treasurer of the United States*.⁴ Finally, the list of current events affecting the stock market has been compiled from the monthly digest of business history published in the *Financial Review*. Of course this list is necessarily incomplete, and the events mentioned are stated with such brevity as to mean little in some cases to readers who have not fresh in mind the business and political developments of the last twenty years. The purpose is merely to suggest the causes of the many short-period oscillations, which are so striking a feature of the stock market.

The long-period shiftings in the general level of prices are largely the effects of causes inadequately represented in this list of events. Most important among these causes are the changes in the financial condition of the companies which have affected the investment value of their shares. The best quantitative measures of these factors for present purposes are the Interstate Commerce Commission's statistics of railway dividends and net income, per mile of line operated.⁵ Table V presents this material in form to facilitate comparison. The actual figures for dividends and net income have been reduced to relative figures on the basis of averages for 1890-99; while the relative prices of stocks have been computed for years ending June 30—the fiscal years of the Commerce Commission. The table shows that stocks have followed in general a course intermediate between

³ In making this computation, each week was assigned to that month within which the majority of its days fell. The source for both sets of data is the *Financial Review*.

⁴ Save for September, 1905, when the *Treasurer's Report* gives a wrong figure, and for October to December, 1909. Data for these months are from the *Monthly Summary of Commerce and Finance*. The figures exclude gold in the ore.

⁵ Net income equals net earnings from operation, plus income from other sources, minus fixed charges and general expenses; dividends include "other payments from net income."

that of dividends and net income. That is, stock prices have been determined largely by the discounting of anticipated dividends, and the anticipations of future dividends have been affected by net income hardly less than by present dividends. But the results have been modified by other factors—such as changes in the rate of discount, alternations of pessimism and optimism in judging a future always uncertain, the varying im-

TABLE V
RELATIVE PRICES OF STOCKS COMPARED WITH RELATIVE RAILWAY DIVIDENDS
AND NET INCOME: BY YEARS ENDING JUNE 30, 1891-1907.
ARITHMETIC MEANS

Years Ending June 30	Relative Prices of Stocks	Relative Railway Dividends Per Mile	Relative Net Income of Railways Per Mile
1890.....	...	104	110
1891.....	112	108	115
1892.....	121	113	121
1893.....	113	109	111
1894.....	83	105	54
1895.....	80	87	54
1896.....	85	87	83
1897.....	75	86	75
1898.....	92	94	129
1899.....	111	107	148
1900.....	132	131	200
1901.....	166	145	209
1902.....	233	167	237
1903.....	242	173	244
1904.....	174	189	222
1905.....	225	198	255
1906.....	262	221	293
1907.....	247	245	335
1908.....	182
1909.....	244

portance of the investment factor as compared with speculation or sacrifice sales, the occurrence of unforeseen events, etc.

A sketch of the general trend of the market is useful in studying these tables. From 133-145⁶ in May of 1890 prices declined to 92-106 in December under European liquidation, stringent money, and the reflex influence of the Baring crisis in London. The first seven months of 1891 was a period of liquidation in the United States and stocks did not recover much of their lost ground; but after the scantiness of foreign wheat crops and the

⁶ These figures show the arithmetic means of the lowest and highest relative prices for the month.

abundance of the American crop had become assured, prices advanced, reaching 121-135 in January, 1892. For the rest of the year and the first four months of 1893 the market sagged under the influence of gold exports, the decline of the Treasury's gold reserve, foreign selling, and the financial embarrassment of certain railways and industrial corporations. In the stock market the crisis of 1893 began with a sharp panic on May 4 and 5. The lowest level touched in that disastrous summer was 68-81 in August. No material recovery occurred during the dull year 1894; but after President Cleveland made his contract with the Morgan-Belmont gold syndicate in February, 1895, stocks began to advance and reached 91-102 in September. The resumption of gold exports and the concurrent decline of the Treasury's reserve again turned the tide and prices were falling when the president's Venezuelan message was published, December 17. The war scare which followed reduced stocks to as low a point as during the worst of the panic of 1893. The recovery of the next spring was checked by the gains of the free-silver party and Mr. Bryan's nomination. In August, 1896, while the issue of the presidential campaign seemed uncertain, stocks fell to their lowest point in the whole period of twenty years, 61-70.

The defeat of the free-silver policy paved the way for a return of business prosperity. But this immediate advance did not outlast November, and for the next eight months stocks were lower than in the week of election. Finally, in midsummer, 1897, the development of a crop situation like that of 1891 caused a sudden advance to 92-107 in September. But fear of war with Spain brought on a relapse, and when fighting began in the next April the market stood at 83-89—substantially the level of November, 1896. During the war, the general trend of stock prices was upward, and peace was followed by a "boom" which carried prices to 118-133 in February, 1899. The next year and a half was a time of many vicissitudes upon the stock market in which industrial shares played the leading rôles. But even the railway shares underwent a fall after ex-Governor Flower's death in May, 1899; scored a marked advance in midsummer; suffered a heavy drop in the panic of December 18;

made a new high record in April, and finished in September, 1900, lower than in February, 1899.

It is notable that in these years of business revival after the depression of 1893-96, stock prices did not equal the high record of May, 1890, until April, 1900. But the great outburst of speculation which followed President McKinley's second election turned the moderate rate of advance into a furious rush, and established what for ten years has appeared to be a permanently higher level of fluctuations. From 117-127 in September, 1900, stocks rose with hardly a check to 239 in May. But May 9 brought the Northern Pacific corner and the market dropped to 169. The difference between these figures is 70 points—the widest spread exhibited by any month in the two decades. This extraordinary fall had but a transient effect upon the general level of prices. In June the high level of May was actually surpassed, and the general trend continued upward until September, 1902, when the figures stood 258-289.

The period of severe liquidation, known as "the rich man's panic," began in October or November, 1902. Under heavy but steady selling the market receded month by month until most of the great gains of 1901 had been lost. The lowest points were 158-175 in October, 1903, and 161-170 in May, 1904.

Another forward movement began while the presidential campaign was in progress, and, as in 1900, the election was followed by an outburst of speculation. This campaign culminated in March, 1905, with prices of 243-264. A decline was followed by a second great "bull" movement which established a record of 265-294 in January, 1906. Once more the spring brought a reaction, and once more the autumn saw an advance. On July 31 the Steel Corporation announced the resumption of dividends upon its common stock, and on August 17 the Union Pacific raised its dividend from 6 to 10 per cent., and the Southern Pacific began paying dividends on its common stock at the rate of 5 per cent. The market responded with an upward rush to 270-287 in September. Thereafter for many months a contest seems to have been waged between two powerful cliques. The efforts to carry prices higher were unavailing. Instead, the level

of fluctuations gradually declined until March, 1907, when the market broke disastrously on the 14th and 25th. The range for that month was 193-243. Summer brought no great recovery, and in August another relapse resulted in prices lower than those for March. Recuperation in September was followed by the outbreak of panic in October. Next month the market fell to 149-169—lower than during the troubles of 1903-04, and lower than at any time since 1900; but still above the highest record of 1890-99.

After the crisis of 1893, recovery was slow, and a fresh decline in 1896 reduced prices to a still lower level. After the crisis of 1907, on the contrary, recovery was rather prompt. By January, 1909, the level was higher than in January, 1907. During the rest of the year, the trend was upward, and by December the highest previous record—that for January, 1906—had been eclipsed.

The general level of prices during these successive periods has been as follows:

	Average Price
January 1890—April 1893, Before the crisis of 1893.....	119
May 1893—June 1897, Crisis and depression.....	81
July 1897—September 1900, Revival of business activity.....	113
October 1900—October 1902, Flood tide of prosperity.....	219
November 1902—July 1904, The "rich man's panic".....	195
August 1904—February 1907, Flood tide of prosperity.....	251
March 1907—September 1908, Liquidation, crisis and depression.....	193
October 1908—December 1909, Revival of business activity.....	268

In preparation for a comparison between the prices of stocks and the prices of commodities, I have revised the Bureau of Labor's index-number for wholesale prices. The Bureau's list of commodities contains anomalies such as the inclusion of a single series for wheat and 10 series for cotton sheetings; two series for hogs and three series for glassware; etc. The result is most unscientific weighting in what purports to be an unweighted index-number. To remedy this obvious defect, I have combined the series for nearly identical articles, thereby reducing the number of series to 145. The new averages which result do not

differ in any year by more than two points from the old—a fresh confirmation of the often-noted fact that systems of weighting make comparatively little difference in a large index number. Table VI presents both the arithmetic means and the medians for stocks and commodities.

TABLE VI

ARITHMETIC MEANS AND MEDIANS OF THE RELATIVE PRICES OF STOCKS AND OF COMMODITIES AT WHOLESALE, 1890-1908

	ARITHMETIC MEANS		MEDIANS	
	Stocks	Commodities	Stocks	Commodities
1890.....	121	115	109	112
1891.....	113	113	106	111
1892.....	123	106	115	107
1893.....	93	105	95	104
1894.....	82	95	87	96
1895.....	85	93	89	94
1896.....	77	89	81	90
1897.....	84	89	88	91
1898.....	94	93	91	94
1899.....	128	102	116	100
1900.....	134	111	124	109
1901.....	211	109	183	107
1902.....	250	114	218	110
1903.....	201	114	182	111
1904.....	192	114	168	112
1905.....	250	116	240	114
1906.....	267	122	236	119
1907.....	204	129	179	129
1908.....	201	121	169	119
1909.....	277	...	241	...

While the general trend of fluctuations is similar for both classes of prices, stocks show a much higher degree of variability. They fall faster and farther after the panic of 1893, rise sooner and farther after the depression is over, fluctuate through a wider range from 1900-1906, and fall sharply in 1907, while the slow decline of commodities leaves their average prices for the year above the level of 1906.

The medians for both stocks and commodities are in general lower than the corresponding arithmetic means in years of high prices, and higher in years of low prices. Of course, the reason is that the arithmetic means are more affected by a few cases of wide deviation from the average than are the medians. The

difference between the two forms of average is much wider in the case of stocks than in that of commodities, because instances of extremely high and low prices are relatively more numerous among stocks. For certain purposes the median is therefore to be preferred to the arithmetic mean as representing the course of the stock market.

The most faithful representation of the price fluctuations among both stocks and commodities, however, is given by the decils of Table VII. The decils are those points in the series of relative prices for each year which divide the whole number of stocks and commodities into ten equal parts—as the medians divide the whole number into halves. Neither arithmetic means, nor medians, nor any other form of averages can represent adequately such complicated facts as this table presents. Their advantage is in giving net resultants simple enough to be readily handled; but, unless interpreted in the light of decils, they make a misleading impression of uniformity and simplicity. Table VII makes it clear that each year certain stocks have stood higher and others have stood lower than many commodities; and *vice versa*, many commodities have stood higher and others lower than certain stocks. Further, it shows that stock prices are more variable than commodity prices, not only in the sense of undergoing wider changes from year to year, but also in the sense of presenting wider divergences between different cases within the same year.

In view of these wide divergences between the relative prices of different stocks, it is interesting to inquire what classes have advanced so much more than others. To this end I have classified the companies included in two ways: first, according to actual prices per share; second, according to geographical location. Table VIII gives the arithmetic means of the relative prices of the 17 companies whose stocks sold on the average in 1890–99 for less than \$25 per share, the 13 companies whose stocks averaged \$25 to \$99, and the 10 companies whose stocks averaged above \$100. The cheap shares have made the largest gains; the medium-priced shares suffered most in 1893–96; and the high-priced shares have exhibited the greatest stability. Even

TABLE VII*

DECILS OF RELATIVE PRICES OF TRANSPORTATION STOCKS AND OF COMMODITIES
AT WHOLESALE, 1890-1909
STOCKS

	Lowest	1st Decil	2d Decil	3d Decil	4th Decil	Med- ian	6th Decil	7th Decil	8th Decil	9th Decil	High- est
1890.....	30	60	92	97	105	109	120	134	146	171	266
1891.....	30	82	93	98	102	106	114	120	132	149	210
1892.....	70	96	101	105	111	115	119	125	142	167	210
1893.....	61	66	85	89	93	95	96	99	102	106	147
1894.....	40	52	65	73	79	87	91	92	96	100	106
1895.....	30	53	71	81	87	89	92	94	98	103	121
1896.....	26	53	64	75	77	81	85	88	92	96	102
1897.....	12	59	66	80	85	88	90	96	98	101	127
1898.....	17	61	79	85	89	91	98	105	107	121	178
1899.....	65	84	97	104	107	116	121	138	147	165	303
1900.....	60	85	91	102	118	124	129	138	150	195	306
1901.....	102	125	136	144	160	183	203	231	282	328	488
1902.....	104	139	149	173	204	218	241	285	342	372	564
1903.....	94	119	131	155	168	182	196	204	248	285	535
1904.....	92	104	130	157	165	168	187	208	223	284	522
1905.....	97	129	159	194	208	240	253	265	306	369	689
1906.....	94	126	170	199	223	236	271	289	327	444	748
1907.....	63	88	116	139	166	179	192	223	256	311	610
1908.....	49	92	117	131	156	169	189	219	257	348	586
1909.....	58	113	132	160	193	241	284	318	372	512	761

COMMODITIES

	Lowest	1st Decil	2d Decil	3d Decil	4th Decil	Med- ian	6th Decil	7th Decil	8th Decil	9th Decil	High- est
1890.....	86	97	101	105	108	112	116	119	126	133	160
1891.....	74	99	101	105	109	111	113	116	122	132	158
1892.....	61	92	99	101	104	107	108	111	114	118	141
1893.....	70	90	96	100	102	104	106	109	111	119	158
1894.....	46	79	85	91	94	96	99	101	103	111	129
1895.....	53	79	86	88	91	94	95	98	100	105	149
1896.....	39	71	79	85	88	90	92	95	98	100	142
1897.....	56	71	78	85	88	91	93	95	98	102	128
1898.....	48	77	84	87	91	94	96	99	101	108	155
1899.....	46	86	89	94	97	100	103	108	112	129	149
1900.....	59	90	98	102	106	109	113	118	123	136	192
1901.....	49	90	97	101	104	107	111	115	120	133	222
1902.....	45	91	98	102	107	110	114	119	134	145	194
1903.....	43	90	98	104	108	111	114	121	129	143	192
1904.....	60	91	98	103	106	112	117	120	130	143	197
1905.....	59	85	97	104	110	114	120	126	131	149	238
1906.....	62	89	100	108	114	119	124	131	137	159	279
1907.....	42	95	104	112	121	129	132	139	147	171	304
1908.....	45	89	102	107	113	119	124	130	139	156	228

*Table VII is made from relative prices based upon the arithmetic means of the highest and lowest monthly quotations of each stock each year. A still wider range of fluctuations would be shown by a table made from relative prices based upon the extreme, instead of the average, actual prices of each year.

the last group, however, has advanced much more than commodities at wholesale. By excluding shares in the companies which passed their receiverships in the nineties, an index-number of stocks could be made which would show considerable divergences from the present one. But such an index-number would be less representative of stock-market history in the last twenty years.⁷

TABLE VIII

RELATIVE PRICES OF STOCKS CLASSIFIED ACCORDING TO AVERAGE ACTUAL PRICES
IN 1890-99. ARITHMETIC MEANS

	Less than \$25 Per Share	\$25 to \$99 Per Share	Over \$100 Per Share
1890.....	125	127	106
1891.....	118	115	101
1892.....	128	126	107
1893.....	92	92	99
1894.....	76	77	95
1895.....	85	79	95
1896.....	73	72	91
1897.....	78	84	93
1898.....	89	98	100
1899.....	136	129	114
1900.....	147	130	116
1901.....	271	186	140
1902.....	325	221	161
1903.....	246	187	141
1904.....	221	192	142
1905.....	297	248	173
1906.....	319	265	183
1907.....	225	214	155
1908.....	218	214	157
1909.....	332	271	193

Finally, Table IX gives arithmetic means of the relative prices of all stocks grouped as in Table I. While the groups have all participated in the larger movements of the market, they show notable differences in degree of change. The North Atlantic and Anthracite Coal railways suffered less than the Southern and Western lines in 1893-96, and advanced less between 1896

⁷ Both Commons' index-number and the *Wall Street Journal's* average prices of 20 railway stocks show a less proportionate advance in the level of fluctuations than the present table. Part of the difference is due to the larger proportion of high-priced stocks in the former tables, and part to their mixing of preferred with common stock. Further, the *Wall Street Journal's* failure to use relative prices gives a large relative change in a low-priced stock less influence upon the average than a much smaller relative change in a high-priced stock.

TABLE IX

RELATIVE PRICES OF SEVEN GROUPS OF TRANSPORTATION STOCKS BY QUARTERS
AND YEARS. 1890-1909. ARITHMETIC MEANS

	5 NORTH ATLANTIC RAILWAYS		4 COAL RAILWAYS		6 SOUTH-ERN RAILWAYS		8 MIDDLE WESTERN RAILWAYS		7 NORTH-WESTERN RAILWAYS		5 PACIFIC RAILWAYS		5 EXPRESS, STEAMSHIP & TELEGRAPH COS.	
	Low	High	Low	High	Low	High	Low	High	Low	High	Low	High	Low	High
1890, Qtrs.														
1.....	112	117	113	121	133	147	128	138	107	118	137	148	118	124
2.....	115	124	120	131	134	146	137	147	113	124	150	165	116	124
3.....	113	118	122	128	143	154	130	138	104	115	144	161	115	121
4.....	97	107	97	111	111	134	95	113	72	86	112	138	103	114
Year.....	110	117	113	122	124	139	114	126	99	111	135	153	113	121
1891, Qtrs.														
1.....	101	107	101	108	112	124	102	111	83	92	116	130	108	115
2.....	99	106	101	109	114	128	104	117	83	93	120	138	106	113
3.....	100	113	100	111	113	134	106	127	84	105	123	145	104	111
4.....	116	126	107	114	123	136	130	146	98	114	141	154	101	109
Year.....	104	113	102	111	115	130	111	125	87	100	125	142	105	112
1892, Qtrs.														
1.....	118	129	118	138	119	132	134	147	106	119	142	155	104	109
2.....	116	124	137	146	109	117	126	134	105	120	133	142	104	110
3.....	114	120	134	141	103	114	118	127	118	135	131	138	106	112
4.....	112	118	129	137	103	113	111	123	118	129	139	139	104	112
Year.....	115	123	130	140	108	119	122	133	112	126	134	143	105	111
1893, Qtrs.														
1.....	107	116	106	123	99	111	106	118	111	127	123	134	103	111
2.....	94	102	87	99	81	95	89	104	87	102	103	119	94	103
3.....	79	93	76	89	59	76	70	83	66	79	69	80	80	90
4.....	88	95	92	104	69	87	80	95	73	85	71	86	86	95
Year.....	92	101	90	104	76	91	86	101	85	99	91	107	91	100
1894, Qtrs.														
1.....	88	94	97	103	68	79	80	87	76	85	71	79	87	93
2.....	85	93	92	98	72	82	79	86	80	89	63	74	86	91
3.....	86	92	93	100	72	86	79	89	63	73	54	63	85	90
4.....	85	91	84	94	77	85	79	87	67	72	56	63	84	91
Year.....	86	93	91	99	72	83	79	88	72	80	61	70	86	92
1895, Qtrs.														
1.....	82	88	77	87	65	77	74	82	58	65	48	57	85	89
2.....	87	95	86	94	79	93	89	102	76	92	58	68	87	94
3.....	87	94	92	99	88	100	100	111	90	104	76	88	92	99
4.....	83	94	83	94	67	84	83	99	82	97	67	80	87	97
Year.....	85	93	84	93	75	89	87	98	78	91	62	73	88	95

TABLE IX—*Continued*

	5 NORTH ATLANTIC RAILWAYS		4 COAL RAILWAYS		6 SOUTH-ERN RAILWAYS		8 MIDDLE WESTERN RAILWAYS		7 NORTH-WESTERN RAILWAYS		5 PACIFIC RAILWAYS		5 EXPRESS, STEAMSHIP & TELE-GRAPH COS.	
	Low	High	Low	High	Low	High	Low	High	Low	High	Low	High	Low	High
1896, Qtrs.														
1.....	86	92	81	91	60	70	80	91	79	88	63	71	85	92
2.....	85	90	83	90	61	71	79	86	78	85	65	71	84	91
3.....	77	85	75	87	55	67	61	72	63	72	55	61	74	81
4.....	85	91	93	104	72	84	70	80	75	85	59	68	81	89
Year.....	83	89	83	93	62	73	72	82	74	82	61	68	81	88
1897, Qtrs.														
1.....	84	89	88	97	78	86	64	74	74	80	54	60	84	88
2.....	82	87	78	85	69	78	62	67	73	79	52	57	85	89
3.....	93	100	91	99	91	110	74	90	91	108	67	80	93	101
4.....	91	97	85	94	92	105	81	93	98	106	78	86	91	98
Year.....	87	93	85	93	82	95	71	81	83	93	63	71	88	94
1898, Qtrs.														
1.....	90	100	84	91	87	103	83	96	96	109	76	87	91	99
2.....	89	94	83	87	85	96	85	92	100	110	72	80	90	97
3.....	93	97	82	87	96	107	90	101	100	107	85	94	97	104
4.....	92	99	78	86	98	113	90	103	101	112	94	110	102	112
Year.....	91	98	81	87	91	105	87	98	96	105	82	93	95	103
1899, Qtrs.														
1.....	107	121	90	99	122	140	114	136	126	141	124	143	116	125
2.....	109	119	95	103	120	138	102	119	146	165	121	137	114	121
3.....	114	120	98	105	130	149	115	128	172	193	126	141	112	120
4.....	107	117	96	105	124	149	117	131	175	198	123	143	107	118
Year.....	110	119	95	103	124	144	112	129	154	174	124	141	113	121
1900, Qtrs.														
1.....	107	115	94	99	132	150	116	129	172	192	128	145	105	114
2.....	105	113	94	99	142	165	115	129	171	191	131	148	99	106
3.....	101	106	94	99	134	146	108	117	164	176	131	143	100	105
4.....	109	125	99	108	155	184	122	146	170	198	152	181	108	124
Year.....	105	115	96	102	140	161	115	131	170	190	136	154	103	112
1901, Qtrs.														
1.....	137	154	121	137	205	240	152	183	208	237	202	235	116	132
2.....	148	176	136	155	242	308	188	226	241	292	236	308	128	146
3.....	150	171	139	152	246	292	200	234	269	302	248	292	135	145
4.....	158	171	149	166	259	283	224	246	282	302	266	288	144	153
Year.....	148	168	136	153	238	281	191	222	250	284	238	281	131	144
1902, Qtrs.														
1.....	157	167	172	183	262	280	235	253	293	318	270	286	158	170
2.....	156	166	178	191	271	294	250	270	325	357	278	298	161	170
3.....	161	173	182	194	305	349	265	288	342	370	296	328	171	189
4.....	147	165	163	184	287	328	230	261	310	342	273	303	166	184
Year.....	155	168	174	188	281	312	245	268	318	347	279	304	164	178

TABLE IX—Continued

	5 NORTH ATLANTIC RAILWAYS		4 COAL RAILWAYS		6 SOUTH-ERN RAILWAYS		8 MIDDLE WESTERN RAILWAYS		7 NORTH-WESTERN RAILWAYS		5 PACIFIC RAILWAYS		5 EXPRESS, STEAMSHIP & TELEGRAPH COS.	
	Low	High	Low	High	Low	High	Low	High	Low	High	Low	High	Low	High
1903, Qtrs.														
1.....	151	163	172	184	297	319	224	245	311	337	274	296	170	182
2.....	129	143	155	169	255	290	186	210	241	276	233	262	146	158
3.....	113	131	148	164	215	255	146	178	181	227	190	224	130	143
4.....	113	122	142	154	212	230	152	167	182	205	195	213	134	144
Year.....	126	140	154	168	245	274	177	200	229	261	223	249	145	157
1904, Qtrs.														
1.....	110	122	146	158	213	238	160	173	202	221	198	224	141	149
2.....	110	118	150	156	214	226	152	162	165	176	212	227	140	145
3.....	125	138	164	177	238	266	164	178	194	211	232	258	148	160
4.....	149	170	194	212	288	323	187	213	231	265	267	295	163	176
Year.....	124	137	163	176	238	263	166	182	203	224	228	251	148	158
1905, Qtrs.														
1.....	172	192	219	235	313	336	206	224	262	294	290	314	173	185
2.....	169	190	224	240	293	329	193	216	247	276	275	305	169	178
3.....	184	197	254	277	321	342	205	222	270	293	300	320	173	179
4.....	184	196	286	309	324	346	213	235	288	313	309	332	171	181
Year.....	177	194	246	265	313	338	204	224	267	294	294	317	172	181
1906, Qtrs.														
1.....	177	192	288	311	326	357	225	248	296	325	333	365	172	184
2.....	163	185	273	317	312	345	214	240	265	297	318	351	163	178
3.....	168	182	296	322	330	354	218	232	270	293	352	394	177	188
4.....	167	181	307	331	337	365	212	227	269	296	383	411	176	186
Year.....	169	185	291	320	326	355	218	237	275	303	347	380	172	184
1907, Qtrs.														
1.....	142	163	261	296	291	338	174	200	221	254	344	395	159	171
2.....	121	135	241	262	262	291	153	168	188	203	306	342	149	161
3.....	116	128	231	248	256	282	149	165	171	186	302	335	149	160
4.....	99	112	196	226	197	235	110	131	134	160	249	289	106	121
Year.....	120	135	232	258	252	287	144	163	179	201	300	340	146	158
1908, Qtrs.														
1.....	100	111	227	253	186	221	119	138	137	157	251	284	128	139
2.....	111	125	252	268	218	250	137	155	166	190	293	320	131	138
3.....	124	138	269	289	246	270	146	160	187	209	329	360	139	145
4.....	139	152	291	307	270	304	161	184	226	263	368	400	147	156
Year.....	118	132	261	280	230	261	141	159	179	205	310	341	137	146
1909, Qtrs.														
1.....	141	157	290	308	316	350	181	199	268	301	398	425	149	155
2.....	155	167	331	361	344	364	193	207	293	324	428	453	157	165
3.....	160	173	346	364	352	379	196	211	294	312	445	479	160	164
4.....	152	164	349	368	365	393	200	220	278	299	452	477	197	230
Year.....	152	165	329	350	344	371	192	209	283	309	431	458	169	184

and 1900. But after 1900 the Coal lines gained much more rapidly than the North Atlantic. In 1909 the rank from the highest to lowest in relative price was Pacific lines, Southern lines, Coal lines, Northwestern lines, Middle western lines, Express, steamship and telegraph companies, and, finally, North Atlantic lines. But even the last group had average prices in 1909 more than half again as high as their average in 1890-99.

Lest it be thought that these differences between the rates at which stocks in the several geographical groups have advanced are due solely to the cheaper prices of western and southern stocks in the nineties, I may point out that the average actual prices of 1890-99 were \$33.28 for the Pacific lines; \$27.08 for the Southern; \$103.98 for the coal-carriers; \$41.41 for the Northwestern lines; \$35.58 for the Middle western; \$82.46 for the Express, steamship and telegraph companies, and \$91.92 for the North Atlantic lines. The correspondence between rate of advance and basic actual prices is, therefore, far from perfect. Clearly, other factors, connected with growth of traffic and financial management, have exercised a potent influence upon the prices of stocks in railways serving different sections of the country.

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